

Figure 1A

Sequence comparison in the region of the ligand binding domain of nicotinic acetylcholine receptor α subunits

Accession Numbers of α subunits used:

```
>gi 871037 : a4_chick
>gi|213218 : a1_Torpedo
>S77094 : a1_Human
>P17644 : a2_Drosophila
>CAA75688 : a3_Drosophila
>CAA04056 : a1_Heliiothis
>AAD09808 : a2_Heliiothis
>AAD09809 : a3_Heliiothis
>CAA57477 : a2_Myzus
>AJ236786 : a3_Myzus
```

Parameters of ClustalX 1.81(Thompson et al. 1997, IGBMC, Strasbourg, France)

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-pwgapopen=10.00 \
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-gapext=0.20 \
-maxdiv=30 \
-endgaps \
-novgap \
-hgapresidues=GPSNDQEKR \
-gapdist=4 \
```

a3_Heliiothis	YDDLLSNNYR LIRPVTVNVSD ILTVRLGLKL SQLMEVNLLKN QVMTTNNLWVE
a2_Myzus	YDDLLSNNYR LIRPVGNNNSD RLTVMRMLKL SQIIEVNLRN QIMTTNNVWVE
a2_Drosophila	YDDLLSNNYR LIRPVSNNTD TVLVKLGRLR SQOLIDNLKD QILTTNNVWLE
a1_Manduca	YDDLLSNNYRK LVRPVLNVSD ALTVRIKLKL SQLIDVNLLKN QIMTTTNLWVE
a1_Heliiothis	YDDLLSNNYRK LVRPVLNVSD ALTVRIKLKL SQLIDVNLLKN QIMTTTNLWVE
a3_Drosophila	YDDLLSNNYRK LVRPVVNVTD ALTVRIKLKL SQLIDVNLLKN QIMTTTNLWVE
a3_Myzus	YDDLLSNNYRK LVRPVLNVSD PLPVRIKLLK SQOLIDINLKN QIMTTTNLWVE
a1_Torpedo	VANLENYNYK VIRRPEHHHTH FVDITVGLQL IQLISVDEVN QIVETNVRLR
a1_Human	VAKLFKDYSS VVRPVEDHRQ VVEVTVGLQL IQLINVDEVN QIVTTNVRLK

a4_Chick LKKLFGSGYNK WSRPVANISD VVLRVRFGLSI AQLIDVDEKN QMMTTNVWVK

a3_Heliothis Q..... KWFY YKLQWNPDY GGVELYVPS
a2_Myzus Q..... EWND YKLKWNPEDY GGVDTLHVPS
a2_Drosophila H..... EWQD HKFKWDPSEY GGVTELYVPS
a1_Manduca Q..... SWYD YKLSWEPREY GGVELMHVPS
a1_Heliothis Q..... SWYD YKLSWEPREY GGVELMHVPS
a3_Drosophila Q..... SWYD YKLKWEPEKEY GGVELMHVPS
a3_Myzus Q..... YWYD YKLTwNPDEY GGEVGLHVPS
a1_Torpedo Q..... QWID VRLRWNPDY GGIRKKIRLPS
a1_Human QGDMDVLPRLP SCVTLGVPFL SHLQNQEWD YNLKWNPDY GGVKKHIPS
a4_Chick Q..... EWHD YKLWRDPQEY ENVTSRIPS

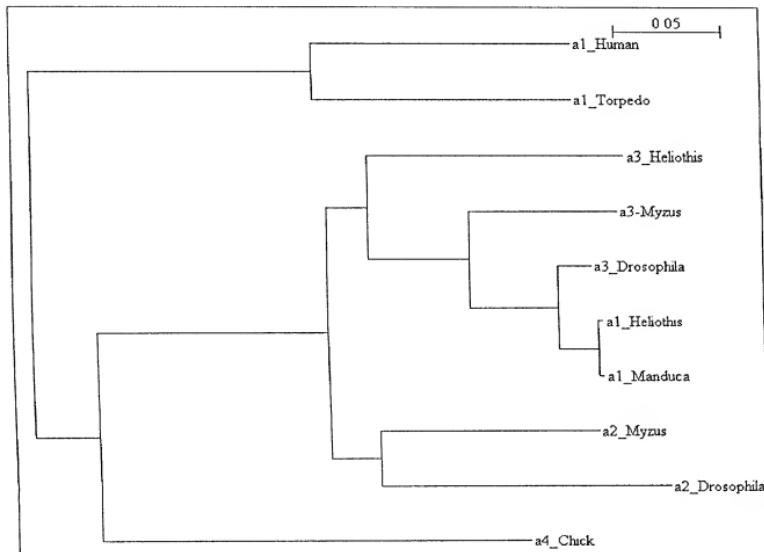
a3_Heliothis EHIWLPDIVL YNNWDGNYEV TLMTKATLKY TGEVNWKPPA IYKSCEINV
a2_Myzus EHIWLPDIVL YNNADGNYEV TIMTKAILHY TGKVVWKPPA IYKSCEINV
a2_Drosophila EHIWLPDIVL YNNADGNYEV TTMTKAILHY TGKVVWKPPA IYKSCEIDV
a1_Manduca DHIWRPDIVL YNNADGNEFV TLATKATLNY TGRVEWRPPA IYKSCEIDV
a1_Heliothis DHIWRPDIVL YNNADGNEFV TLATKATLNY TGRVEWRPPA IYKSCEIDV
a3_Drosophila DHIWRPDIVL YNNADGNEFV TLATKATLNY TGRVEWRPPA IYKSCEIDV
a3_Myzus EHVWRPDIVL YNNADGNFEV TLATKAMLHY SGRVEWKPPA IYKSCEIDV
a1_Torpedo DDVWLPLDVL YNNADGDFAI VHMTKLLDY TGKIMWTTPA IFKSYCEIIV
a1_Human EKIWRPDIVL YNNADGDFAI VRFTKVLLQY TGHTWTPA IFKSYCEIIV
a4_Chick ELIWRPDIVL YNNADGDFAV THLTKAHLY DGRIKWMPPA IYKSSCSIDV

a3_Heliothis EYFPFDEQTC FMKFGSWTYN GAQVDLKHMQ QSPGSS.LVH VGIDLSEFYL
a2_Myzus EYFPFDEQTC SMKFGSWTYD GYMMDLRHIS QAPDS.VIE VGIDLQDYYL
a2_Drosophila RYFPFDQQTC FMKFGSWTYD GDQIDLKHS QKNDKDNKVE IGIDIREYYP
a1_Manduca EYFPFDEQTC VMKFGSWTYD GFQVDLRHID EVRTGN.VVE LGVDLSEFYT
a1_Heliothis EYFPFDEQTC VMKFGSWTYD GFQVDLRHID EARCTN.VVE LGVDLSEFYT
a3_Drosophila EYFPFDEQTC VMKFGSWTYD GFQVDLRHID ELNGTN.VVE VGVDSLSEFYT
a3_Myzus EYFPFDEQTC VMKFGSWTYD GFQVDLRHAN EVSGSR.VVD VGVDSLSEFYA
a1_Torpedo THFPFDQQNC TMKLGWIYTQ GTKVSISSPES DR..... PDLSFTME
a1_Human THFPFDEQNC SMKLGWTWYD GSVAINPES DQ..... PDLSNFME
a4_Chick TFFFDFDQQNC KMKFGSWTYD KAKIDLVSMSH SH..... VDQLDYWE

a3_Heliothis SVEWDILEVP ATRNKEYYPC CEEP.FSDIT FKLTMRKRTL FYTvnLIIPC
a2_Myzus SVEWDIMGP AVRHEKFYVC CEEP.YLDIF FNITLRRKTL FYTvnLIIPC
a2_Drosophila SVEWDILGVP AERHEKYYP CEEP.YPDIF FNITLRRKTL FYTvnLIIPC
a1_Manduca SVEWDILEVP AVRNEKFYTC CDEP.YLDIT FNITMRRKTL FYTvnLIIPC
a1_Heliothis SVEWDILEVP AVRNEKFYTC CDEP.YLDIT FNITMRRKTL FYTvnLIIPC
a3_Drosophila SVEWDILEVP AVRNEKFYTC CDEP.YLDIT FNITMRRKTL FYTvnLIIPC
a3_Myzus SVEWDILEVP AIRNEKFYTC CEEP.YLDIT FNITMRRKTL FYTvnLIIPC
a1_Torpedo SGEWVMKDYL GWKHWWYTC CPDTPYLDIT YHFIMQRIPL YFIVNVIIPC
a1_Human SGEWVIKESR GWKHSVTYSC CPDTPYLDIT YHFVMQRPL YFIVNVIIPC
a4_Chick SGEWVIINAV GNYSNSKYYEC CTEI.YPDIT YSFIIIRRLPL FYTvnLIIPC

Figure 1B

Relationship of nicotinic acetylcholine receptor α subunit sequences based on comparison of their ligand binding domains



Tree of amino acid sequences from Fig. 1A produced from alignment of amino acid sequences from Fig. 1A by the program njplotwin95 using standard parameters.

Figure 2

2A) Receptor comprising polypeptide according to SEQ ID NO: 3 and chicken $\alpha 2$

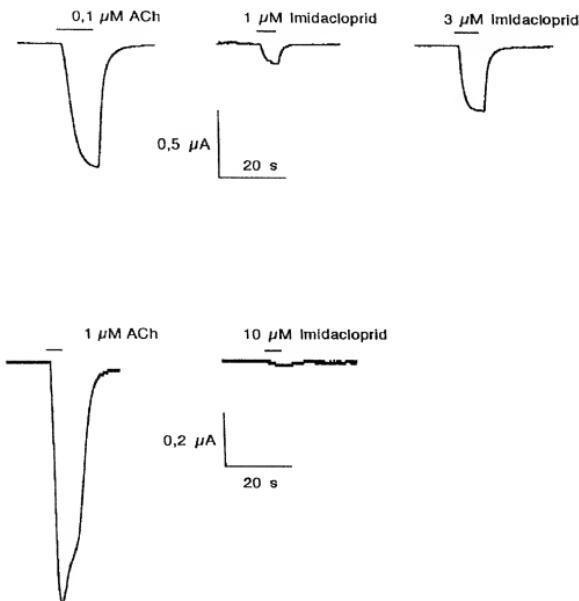
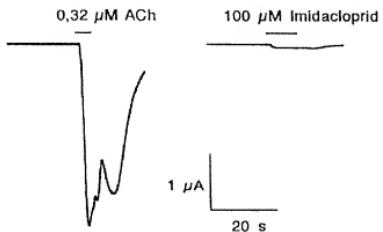


Figure 2 (cont(d))

2B) Receptor comprising chicken $\alpha 4$ and chicken $\alpha 2$



2C) Receptor comprising Heliothis $\alpha 1$ and chicken $\beta 2$

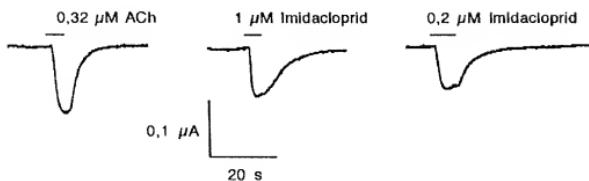
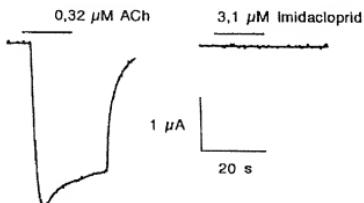


Figure 2 (cont(d))

2D) Receptor comprising polypeptide according to SEQ ID NO: 7 and chicken β 2



2E) Receptor comprising polypeptide according to SEQ ID NO: 11 and chicken β 2

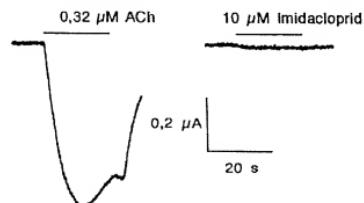
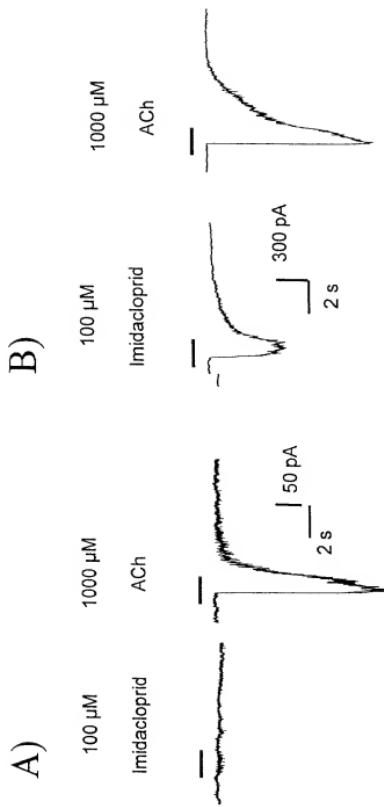


Figure 3



A: Receptor comprising chicken α -4 and chicken α -2 expressed in Sf-9 cells
B: Receptor comprising polypeptide according to SEQ ID NO: 3 and chicken α -2 expressed in Sf-9 cells

Figure 4

